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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the aqueous nail enamel used for coloring or ornamenting a pawl.

[0002]

[Description of the Prior Art] Since it is necessary to make it dry at an early stage, in order to require film formation nature and to raise fanciness, it is required for the nail enamel (called a nail enamel) applied to a pawl for gloss to be good, and since those who used it lead everyday life, it is required for adhesion, waterproof milkiness nature, and makeup *** to be good, and in case it removes for applying further and preventing generating of the nonuniformity at the time of repair etc., it is required to be easily removable.

[0003] The so-called thing of the solvent system which consisted of coloring materials, such as organic solvents, such as plasticizers, such as resin, such as a nitrocellulose and alkyd resins, phthalic ester, and adipate, acetic ester and lower alcohol, and toluene, and an organic pigment, by making such a demand into the nail enamel satisfied mostly is used conventionally. However, when the organic solvent contained in these nail enamel uses it repeatedly owing to, the gloss of a pawl may be lost, a pawl may grow yellow, or a pawl may break. Moreover, the nail enamel of a solvent system has inflammability, is dangerous and also has a fault of the adverse effect to the body.

[0004] For the object which cancels these faults, water-soluble or water-dispersion aqueous nail enamel is proposed. For example, aqueous nail enamel is indicated by JP,48-35047,A, JP,56-131513,A, JP,57-56410,A, JP,2-221214,A, JP,4-103512,A, JP,4-103513,A, JP,4-103514,A, JP,4-297408,A, JP,5-163118,A, JP,6-298624,A, JP,7-69833,A, etc.

[0005]

[Problem(s) to be Solved by the Invention] However, these aqueous nail enamel has many which are inferior in film formation nature, gloss, and clearance nature, and that in which film formation nature, gloss, and clearance nature are comparatively excellent is also inferior in adhesion, waterproof milkiness nature, and makeup ***, and has the problem that it is inadequate as practical synthetic engine performance.

[0006] This invention is made in view of these problems, and it sets it as the object to offer aqueous nail enamel excellent in film formation nature, gloss, adhesion, waterproof milkiness nature, makeup ***, and clearance nature.

[0007]

[Means for Solving the Problem] the aqueous nail enamel which invention made in order to solve the above-mentioned problem becomes from the emulsion to which weight average molecular weight is 80000 or less [50000 or more], and glass transition temperature uses as a principal component acrylic 50-degree-C or more resin it is [resin] 80 degrees C or less -- come out and it is (claim 1).

[0008] According to this invention, since specific acrylic resin is used as a dispersoid, film formation nature, gloss, adhesion, waterproof milkiness nature, makeup ***, and clearance nature can be raised so that it may explain in full detail behind.

[0009] In this invention, it is desirable to make solid content in aqueous nail enamel into 60 or less % of the weight 10% of the weight or more (claim 2). Moreover, it is desirable to make mean

particle diameter of acrylic resin into 30nm or more 200nm or less (claim 4). The paint film of moderate thickness can be obtained by carrying out like this, maintaining the good spreading nature of aquosity nail enamel, film formation nature, etc.

[0010] Moreover, in these invention, it is desirable to have carried out copolymerization of a hydrophobic monomer and the hydrophilic monomer for acrylic resin (claim 3). By carrying out like this, the water resisting property of a paint film can be raised further, maintaining the stability of aquosity nail enamel.

[0011] Furthermore, in these invention, in order to raise film formation nature further, maintaining the storage stability of aquosity nail enamel, it is desirable to add the film formation assistant below 50 weight sections more than the 0.5 weight section to all the resinous principle 100 weight sections (claim 5).

[0012]

[Embodiment of the Invention] The emulsion which uses acrylic resin as a principal component is used for the aquosity nail enamel of this invention. An emulsion may be prepared by the emulsion-polymerization method, and after a polymerization is carried out by the solution polymerization method, phase inversion emulsification may be carried out and it may be prepared. Since using an emulsion-polymerization method especially has the simple polymerization, it is desirable. When using an emulsion-polymerization method, the monomer dropping test and polymerization nature constituent which trickle a polymerization nature constituent under existence of water, an emulsifier, etc. are emulsified under existence of water and an emulsifier, and while it is dropped, the 1 bath polymerization method for performing a polymerization under existence of the pre emulsion method for performing a polymerization, water, an emulsifier, and a polymerization nature constituent etc. can be adopted.

[0013] Weight average molecular weight of this acrylic resin is made or less [50000 or more] into 80000. Here, weight average molecular weight is measured by the filtration chromatography which used the tetrahydrofuran as a solvent and used polystyrene as a reference material. The adhesion of aquosity nail enamel, waterproof milkiness nature, makeup ****, etc. will fall that the weight average molecular weight of acrylic resin is less than 50000. On the contrary, if weight average molecular weight exceeds 80000, the clearance nature of aquosity nail enamel will fall. As for the weight average molecular weight of this viewpoint to acrylic resin, 75000 or less [60000 or more] are desirable.

[0014] The glass transition point of this acrylic resin is made into 50 degrees C or more 80 degrees C or less. The waterproof milkiness nature of aquosity nail enamel will fall that the glass transition temperature of acrylic resin is less than 50 degrees C. On the contrary, if glass transition temperature exceeds 80 degrees C, the film formation nature and the gloss of aquosity nail enamel will fall.

[0015] In addition, the glass transition point T_g in the case of copolymerizing acrylic resin from two or more kinds of monomers is computed by the following equation drawn from Tobolsky's formula.

$$T_g = 1 / (W_1 / T_{g1} + W_2 / T_{g2} + \dots)$$

Expressing the glass transition temperature (K) of that polymer when T_{g1} , T_{g2} , and ... form a polymer with each monomer simple substance among this formula, W_1 , W_2 , and ... express the weight fraction of each monomer.

[0016] The mean particle diameter of acrylic resin has 30nm or more desirable 200nm or less, and 80nm or more especially its 150nm or less is desirable. If mean particle diameter is under the above-mentioned range, and water is added so much in order for ***** at the time of the viscosity of aquosity nail enamel being too high, and applying to a pawl to become difficult and to lower viscosity to a suitable value, solid content becomes 10 or less % of the weight, and may be unable to earn thickness. On the contrary, when mean particle diameter exceeds the above-mentioned range, the film formation nature and the gloss of aquosity nail enamel may fall.

[0017] If it faces carrying out the polymerization of this acrylic resin and copolymerization of a hydrophobic monomer and the hydrophilic monomer is carried out, the water resisting property of a paint film can be raised maintaining the stability of aquosity nail enamel. When carrying out copolymerization, the amount of the hydrophobic monomer closed to all monomers has 99.5 or less desirable % of the weight 87 % of the weight or more, and especially its 99 or less % of the

weight 88 % of the weight or more is desirable. Moreover, the amount of the hydrophilic monomer closed to all monomers has 3 or less desirable % of the weight 0.01 % of the weight or more, and especially its 2 or less % of the weight 0.1 % of the weight or more is desirable. When the rate of an use rate of a hydrophobic monomer falls and the rate of an use rate of a hydrophilic monomer rises, the water resisting property of the paint film obtained may fall. On the contrary, when the rate of an use rate of a hydrophobic monomer rises and the rate of an use rate of a hydrophilic monomer falls, the stability of aquosity nail enamel may fall.

[0018] As a hydrophobic monomer used, for example A methyl acrylate, an ethyl acrylate, Acrylic-acid propyl, butyl acrylate, acrylic-acid hexyl, acrylic-acid cyclohexyl, 2-ethylhexyl acrylate, acrylic-acid lauryl, acrylic-acid stearyl, A methyl methacrylate, ethyl methacrylate, methacrylic-acid propyl, Methacrylic-acid butyl, methacrylic-acid hexyl, cyclohexyl methacrylate, With an or more 1 carbon number [or less 24] alkyl or cycloalkyl ester of an acrylic acid (meta), such as 2-ethylhexyl methacrylate, methacrylic-acid lauryl, and stearyl methacrylate; Hydroxyethyl acrylate, Hydroxyethyl methacrylate, hydroxypropyl acrylate, With an or more 2 carbon number [of acrylic acids (meta), such as hydroxypropyl methacrylate, / or less 8] hydroxyalkyl ester; Styrene, Aromatic series partial saturation monomers, such as vinyltoluene, alpha methyl styrene, N-vinyl pyrrolidone, and vinylpyridine; Glycidyl acrylate, Acrylic ester of epoxy group content, such as glycidyl methacrylate, (meta); An acrylic-acid 1-methyl 2-pyrrolidone, An acrylic-acid 1-ethyl 2-pyrrolidone, a methacrylic-acid 1-methyl 2-pyrrolidone, With an or more 1 carbon number [of pyrrole ring content of acrylic acids (meta), such as a methacrylic-acid 1-ethyl 2-pyrrolidone, / or less 24] alkyl ester; Acrylic-acid 1-methyl 2-oxazolidone, Acrylic-acid 1-ethyl 2-oxazolidone, methacrylic-acid 1-methyl 2-oxazolidone, Alkyl with an or more 1 carbon number [of oxazole ring content of acrylic acids (meta), such as methacrylic-acid 1-ethyl 2-oxazolidone, / or less 24] ester; etc. is mentioned, these are independent, or two or more sorts are put together, and it is used.

[0019] As a hydrophilic monomer used, the acrylate which has an acrylic acid, a methacrylic acid, a maleic acid, a crotonic acid, and a polyoxyethylene chain, for example (meta), acrylamide, N-methylol acrylamide, N-butoxy methylacrylamide, etc. are mentioned, these are independent, or two or more sorts are put together, and it is used.

[0020] When carrying out the emulsion polymerization of this acrylic resin, the various emulsifiers of an anionic emulsifier, a nonionic emulsifier, etc. used for the usual emulsion polymerization are usable. One kind of emulsifier may be used independently and two or more sorts of emulsifiers may be used together. Moreover, the reactant emulsifier which introduced the polymerization nature functional group into these emulsifiers can also be used. Below 10 weight sections of the amount of the emulsifier used are desirable more than the 0.5 weight section to all the resinous principle 100 weight sections, and below its 8 weight sections especially are desirable more than 1 weight section. When the amount used is under the above-mentioned range, polymerization stability may get worse. On the contrary, when the amount used exceeds the above-mentioned range, the water resisting property of the aquosity nail enamel obtained may fall.

[0021] As an anionic emulsifier used, for example Sodium dodecylbenzenesulfonate, Sodium lauryl sulfate, a stearyl sodium sulfate, alkyl diphenyl ether disulfon acid sodium, Polyoxyethylene nonyl ethereal sulfate sodium, a polyoxyethylene-alkyl-ether sodium sulfate, Polyoxyethylene nonyl ethereal sulfate sodium, a polyoxyethylene-alkyl-phenyl-ether sodium sulfate, Sodium salt, such as dialkyl sulfo sodium succinate and a sodium stearate, is mentioned, and potassium salt equivalent to these, ammonium salt, etc. can be used.

[0022] As a non-ion system emulsifier, the fatty acid ester of a fatty alcohol alkylene oxide addition product, an alkylphenol alkylene oxide addition product, a fatty-acid alkylene oxide addition product, a high-class alkylamine alkylene oxide addition product, a fatty-acid amide alkylene oxide addition product, a sorbitol, or sorbitan etc. is mentioned.

[0023] When carrying out the emulsion polymerization of the acrylic resin, a radical polymerization initiator is used. With heat, the reducibility matter, etc., radical decomposition of the radical polymerization initiator can be carried out, it can cause addition polymerization to a monomer, and can use the persulfate of water-soluble or oil solubility, a peroxide, an azo compound, etc.

[0024] As a radical polymerization initiator used, potassium persulfate, sodium persulfate, ammonium persulfate, hydrogen-peroxide, t-butyl hydroperoxide, t-butyl peroxybenzoate, 2, and 2-azobisisobutyronitril, 2, and 2-azobis (2-diaminopropane) hydro chloride etc. is mentioned, for example.

[0025] What is necessary is just to use reducing agents, such as sodium bisulfite, ferrous chloride, an ascorbic-acid salt, and a Rongalite, combining these radical polymerization initiators, when carrying out a polymerization at the case where you want to promote a polymerization, or low temperature.

[0026] In the aquosity nail enamel of this invention, as mentioned above, although weight average molecular weight of acrylic resin is made or less [50000 or more] into 80000, in order to adjust weight average molecular weight within the limits of this, a chain transfer agent may be used. As a chain transfer agent used, halogenated hydrocarbon, such as xantho gene disulfide; carbon tetrachlorides, such as mercaptans; dimethyl xantho gene disulfide, such as an octyl mercaptan, dodecyl mercaptan, thioglycolic acid octyl, and mercaptopropionic acid octyl, and diethyl xantho gene disulfide, and an ethylene bromide, is mentioned, for example.

[0027] Although especially the resin dispersant used for the aquosity nail enamel of this invention shows stable dispersibility even if it does not use a neutralizer, it may carry out the optimum dose activity of the pH regulators, such as ammonia, a sodium hydroxide, a potassium hydroxide, and amines, if needed.

[0028] The film formation assistant usually added by nail enamel, a plasticizer, a pigment, a thickener, a defoaming agent, antiseptics, etc. are suitably blended with the aquosity nail enamel of this invention. Moreover, depending on an application, a chelating agent, a dispersant, a color, perfume, an oil content, a moisturizer, an ultraviolet ray absorbent, etc. may be added.

[0029] It is desirable to add a film formation assistant especially, in order to raise the film formation nature in the ordinary temperature at the time of being applied to a pawl also in these additives. Below 50 weight sections of the amount of the film formation assistant used are desirable more than the 0.5 weight section to all the resinous principle 100 weight sections, and below its 30 weight sections especially are desirable more than 1 weight section. If the amount of the film formation assistant used is under the above-mentioned range, film formation nature may become less enough. On the contrary, when the amount used exceeds the above-mentioned range, the storage stability of aquosity nail enamel may fall.

[0030] As a film formation assistant used, alcohols, such as Cellosolve acetate, such as carbitols, such as Cellosolve acetate, such as ethyl Cellosolve acetate, and dimethyl carbitol, and ethyl Cellosolve acetate, and a hexanol, etc. are mentioned, for example, these are independent, or two or more sorts are put together, and it is used.

[0031]

[Example] The thing for which this invention should be hereafter interpreted restrictively based on disclosure of these examples although this invention is concretely explained in accordance with an example and which do not come out is natural.

[0032] [Preparation of the aquosity nail enamel of an example and the example of a comparison]

[Example 1] First, the deionized water 16 weight section, the polyoxyethylene nonylphenyl ethereal sulfate sodium (number of ethyleneoxide addition mols: 30) 0.75 weight section as an anionic emulsifier, the methyl-methacrylate 42 weight section, the butyl acrylate 7 weight section, the acrylic-acid 1 weight section, and the thioglycolic acid octyl 0.3 weight section as a chain transfer agent were mixed using an agitator as the 1st step, and the uniform pre emulsion was obtained.

[0033] Next, the deionized water 33 weight section and the above-mentioned polyoxyethylene nonylphenyl ethereal sulfate sodium 0.008 weight section were taught to 4 opening flask with an equipped with an agitator, a reflux condenser, dropping ****, and a thermometer capacity of 2l. as the 2nd step, and it heated to 80 degrees C under the nitrogen gas air current. The potassium persulfate 0.1 weight section as a radical polymerization initiator was added here, and the pre emulsion obtained in the 1st step was dropped over 3 hours. The polymerization temperature at this time was maintained in the 68-degree-C or more range of 72 degrees C or less. After dropping termination maintained the above-mentioned temperature requirement for 2 hours, and made the polymerization complete. It cooled to the room temperature after that, and filtered

through the filter cloth of 200 meshes. The solid content of the obtained resin emulsion was 50 % of the weight, the mean particle diameter of a dispersoid was 120nm, and the weight average molecular weight of resin was 70000.

[0034] As the 3rd step in next, the resin emulsion 100 weight section obtained in the 2nd step As shown in a table 1, the water 33 weight section, the butyl Cellosolve 7.5 weight section as a film formation assistant, The red-pigments (R-226) 1 weight section, the bentonite 0.3 weight section as a thickener, 25% aqueous ammonia small quantity for adjusting to 7 from pH6, the methylparaben 0.05 weight section as antiseptics, and the silicone system defoaming agent ("KM72F" by Shin-Etsu Chemical Co., Ltd.) 0.05 weight section were blended, and the aquosity nail enamel of an example 1 was adjusted.

[0035] [Example 2] The monomer used in the 1st step was made into the methyl-methacrylate 30 weight section, the 2-ethylhexyl acrylate 9 weight section, the styrene 10 weight section, and the acrylic-acid 1 weight section, and also the resin emulsion was obtained like the example 1. The solid content of this resin emulsion was 50 % of the weight, the mean particle diameter of a dispersoid was 100nm, and the weight average molecular weight of resin was 65000. The combination formula shown in a table 1 at this resin emulsion was given, and the aquosity nail enamel of an example 2 was obtained.

[0036] [Example 1 of a comparison] The loadings of the thioglycolic acid octyl used in the 1st step were made into the 0.5 weight section, and also the resin emulsion was obtained like the example 1. The solid content of this resin emulsion was 50 % of the weight, the mean particle diameter of a dispersoid was 120nm, and the weight average molecular weight of resin was 40000. The combination formula shown in a table 1 at this resin emulsion was given, and the aquosity nail enamel of the example 1 of a comparison was obtained.

[0037] [Example 2 of a comparison] The loadings of the thioglycolic acid octyl used in the 1st step were made into the 0.2 weight section, and also the resin emulsion was obtained like the example 1. The solid content of this resin emulsion was 50 % of the weight, the mean particle diameter of a dispersoid was 120nm, and the weight average molecular weight of resin was 110000. The combination formula shown in a table 1 at this resin emulsion was given, and the aquosity nail enamel of the example 2 of a comparison was obtained.

[0038] [Example 3 of a comparison] The monomer used in the 1st step was made into the methyl-methacrylate 36 weight section, the butyl acrylate 13 weight section, and the acrylic-acid 1 weight section, and also the resin emulsion was obtained like the example 1. The solid content of this resin emulsion was 50 % of the weight, the mean particle diameter of a dispersoid was 120nm, and the weight average molecular weight of resin was 70000. The combination formula shown in a table 1 at this resin emulsion was given, and the aquosity nail enamel of the example 3 of a comparison was obtained.

[0039] [Example 4 of a comparison] Made into the methyl-methacrylate 36 weight section, the butyl acrylate 13 weight section, and the acrylic-acid 1 weight section the monomer used in the 1st step, and the loadings of thioglycolic acid octyl were made into the 0.5 weight section, and also the resin emulsion was obtained like the example 1. The solid content of this resin emulsion was 50 % of the weight, the mean particle diameter of a dispersoid was 120nm, and the weight average molecular weight of resin was 40000. The combination formula shown in a table 1 at this resin emulsion was given, and the aquosity nail enamel of the example 4 of a comparison was obtained.

[0040] [Example 5 of a comparison] Made into the methyl-methacrylate 36 weight section, the butyl acrylate 13 weight section, and the acrylic-acid 1 weight section the monomer used in the 1st step, and the loadings of thioglycolic acid octyl were made into the 0.2 weight section, and also the resin emulsion was obtained like the example 1. The solid content of this resin emulsion was 50 % of the weight, the mean particle diameter of a dispersoid was 120nm, and the weight average molecular weight of resin was 110000. The combination formula shown in a table 1 at this resin emulsion was given, and the aquosity nail enamel of the example 5 of a comparison was obtained.

[0041] [Example 6 of a comparison] The monomer used in the 1st step was made into the methyl-methacrylate 46 weight section, the butyl acrylate 3 weight section, and the acrylic-acid 1 weight section, and also the resin emulsion was obtained like the example 1. The solid content

of this resin emulsion was 50 % of the weight, the mean particle diameter of a dispersoid was 120nm, and the weight average molecular weight of resin was 70000. The combination formula shown in a table 1 at this resin emulsion was given, and the aquosity nail enamel of the example 6 of a comparison was obtained.

[0042] [Example 7 of a comparison] Made into the methyl-methacrylate 46 weight section, the butyl acrylate 3 weight section, and the acrylic-acid 1 weight section the monomer used in the 1st step, and the loadings of thioglycolic acid octyl were made into the 0.5 weight section, and also the resin emulsion was obtained like the example 1. The solid content of this resin emulsion was 50 % of the weight, the mean particle diameter of a dispersoid was 120nm, and the weight average molecular weight of resin was 40000. The combination formula shown in a table 1 at this resin emulsion was given, and the aquosity nail enamel of the example 7 of a comparison was obtained.

[0043] [Example 8 of a comparison] Made into the methyl-methacrylate 46 weight section, the butyl acrylate 3 weight section, and the acrylic-acid 1 weight section the monomer used in the 1st step, and the loadings of thioglycolic acid octyl were made into the 0.2 weight section, and also the resin emulsion was obtained like the example 1. The solid content of this resin emulsion was 50 % of the weight, the mean particle diameter of a dispersoid was 120nm, and the weight average molecular weight of resin was 110000. The combination formula shown in a table 1 at this resin emulsion was given, and the aquosity nail enamel of the example 8 of a comparison was obtained.

[0044]

[A table 1]

表 1 水性ネイルエナメルの配合処方

単位：重量部

	実施例 1	実施例 2	比較例 1	比較例 2	比較例 3	比較例 4	比較例 5	比較例 6	比較例 7	比較例 8
樹脂エマルジョン	100	100	100	100	100	100	100	100	100	100
水	33	33	33	33	35	35	35	31	31	31
ブチルセルソルブ	7.5	7.5	7.5	7.5	5.5	5.5	5.5	9.5	9.5	9.5
赤色顔料 R-226	1	1	1	1	1	1	1	1	1	1
ベントナイト	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
25%アンモニア水	少量	少量	少量	少量	少量	少量	少量	少量	少量	少量
メチルバラベン	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
消泡剤	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

[0045] The following assessment was presented with the aquosity nail enamel of [assessment of aquosity nail enamel of each example and each example of comparison] each example, and each example of a comparison.

[0046] Under conditions of the [film formation nature] temperature of 20 degrees C, and 65% of humidity RH, each aquosity nail enamel was applied so that it might become about 20 micrometers of thickness with an applicator on a glass plate. It judged visually whether a fingertip would describe a paint film lightly every other minute after [from spreading] 1-minute progress, and a fingerprint would be attached to a paint film. That to which a fingerprint attaches the thing by which surpassed 0 and 3 minutes and the fingerprint stopped attaching the thing [a fingerprint] no longer attaching within 3 minutes within 6 minutes as ** and six separations was made into x. These assessment results are shown in a following table 2 and a following table 3.

[0047] Under conditions of the [gloss] temperature of 20 degrees C, and 65% of humidity RH, each aquosity nail enamel was applied so that it might become about 20 micrometers of thickness with an applicator on a glass plate. Leave this for 15 minutes, it was made to dry, and the gloss of a paint film was judged visually. What is inferior in ** and gloss in what is a little inferior in O and gloss in the good thing of gloss was made into x. These assessment results are shown in a following table 2 and a following table 3.

[0048] Each aquosity nail enamel was applied to the pawl under conditions of [adhesion] temperature of 20 degrees C, and 65% of humidity RH. And after making it dry for 15 minutes, the paint film was ground against the pencil of a degree of hardness H, and extent of exfoliation of a paint film was judged visually. What ** and intense exfoliation are regarded as in what O and exfoliation are regarded a little as in what exfoliation is not regarded as was made into x. These assessment results are shown in a following table 2 and a following table 3.

[0049] Under conditions of the [waterproof milkiness nature] temperature of 20 degrees C, and 65% of humidity RH, each aquosity nail enamel was applied so that it might become about 20 micrometers of thickness with an applicator on a glass plate. Leave this for 15 minutes and it was made to dry, and after soaking in 45-degree C water and leaving it for 15 minutes, extent of milkiness of a paint film was judged visually. That to which milkiness looked at and opacified what O and milkiness are regarded a little as in what milkiness is not regarded as in ** and a front face was made into x. These assessment results are shown in a following table 2 and a following table 3.

[0050] I had [makeup ****] each aquosity nail enamel applied to five women's pawl. And I had a usual life lived for two days, the ordinary state of a subsequent pawl was observed visually, and makeup **** was evaluated. What is inferior in ** and makeup **** in what is a little inferior in O and makeup **** in the good thing of makeup **** was made into x. These assessment results are shown in a following table 2 and a following table 3.

[0051] [Clearance nature] each aquosity nail enamel was applied to the pawl, and was dried for 15 minutes. And the paint film was lightly wiped off 5 times with the gauze to which impregnation of the acetone water solution was carried out 70%, and the feeling of resistance in that case was evaluated. A feeling of resistance made [few things] x what has many **s and feeling of resistance for what has a little many O and feeling of resistance. These assessment results are shown in a following table 2 and a following table 3.

[0052]

[A table 2]

表 2 各水性ネイルエナメルの評価結果

配合単位：重量部

	実施例 1	実施例 2	比較例 1	比較例 2	比較例 3
疎水性モノマー					
メタクリル酸メチル	4 2	3 0	4 2	4 2	3 6
アクリル酸ブチル	7	—	7	7	1 3
アクリル酸 2-エチルヘキシル	—	9	—	—	—
スチレン	—	1 0	—	—	—
親水性モノマー					
アクリル酸	1	1	1	1	1
チオグリコール酸オクチル	0. 3	0. 3	0. 5	0. 2	0. 3
分散質					
樹脂の重量平均分子量	70000	65000	40000	110000	70000
樹脂のガラス転移点 (℃)	7 0	5 5	7 0	7 0	4 5
平均粒子直径 (nm)	1 2 0	1 0 0	1 2 0	1 2 0	1 2 0
ネイルエナメルの固形分(重量%)	3 6	3 6	3 6	3 6	3 6
造膜性	○	○	○	○	○
光沢	○	○	○	○	○
密着性	○	○	△	○	○
耐水白化性	○	○	△	○	×
化粧持ち	○	○	×	○	△
除去性	○	○	○	×	○

[0053]

[A table 3]

表 3 各水性ネイルエナメルの評価結果

配合単位：重量部

	比較例 4	比較例 5	比較例 6	比較例 7	比較例 8
疎水性モノマー					
メタクリル酸メチル	3 6	3 6	4 6	4 6	4 6
アクリル酸ブチル	1 3	1 3	3	3	3
アクリル酸 2-エチルヘキシル	—	—	—	—	—
スチレン	—	—	—	—	—
親水性モノマー					
アクリル酸	1	1	1	1	1
チオグリコール酸オクチル	0. 5	0. 2	0. 3	0. 5	0. 2
分散質					
樹脂の重量平均分子量	40000	110000	70000	40000	110000
樹脂のガラス転移点 (℃)	4 5	4 5	9 0	9 0	9 0
平均粒子直径 (nm)	1 2 0	1 2 0	1 2 0	1 2 0	1 2 0
ネイルエナメルの固形分(重量%)	3 6	3 6	3 6	3 6	3 6
造膜性	○	○	△	△	△
光沢	○	○	○	○	○
密着性	△	○	△	×	△
耐水白化性	×	×	○	△	○
化粧持ち	△	○	△	×	×
除去性	○	△	○	○	×

[0054] In a table 2 and a table 3, weight average molecular weight is 80000 or less [50000 or more], and is [the aquosity nail enamel of the examples 1 and 2 which made the dispersoid acrylic 50-degree-C or more resin it is / resin / 80 degrees C or less] excellent in glass transition temperature in all film formation nature, gloss, adhesion, waterproof milkiness nature, the makeup ****, and clearance nature. On the other hand, the aquosity nail enamel of each example of a comparison is inferior in one of evaluation criteria. From this assessment result, the predominance of the aquosity nail enamel of this invention was proved.

[0055]

[Effect of the Invention] As explained above, according to this invention, the aquosity nail enamel surpassed in all film formation nature, gloss, adhesion, waterproof milkiness nature, the makeup ****, and clearance nature can be offered.

[Translation done.]